USAMRIID

Bioterrorism:

Recognition, Protection, and Treatment

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U.S. Army Medical Research Institute of Infectious Diseases

BW Proliferation and the Changing World

- ✓ Increasing number of countries developing BW capability
  - at least 5 countries are implicated as sponsors of international terrorism
- ✓ Regional aggressors and terrorist groups
- ✓ Groups or individuals who seek revenge against the government or society
  - extremist groups
  - religious fanaticism
- ✓ State Sponsored vs. Non-State Sponsored

World Trade Center
February 1993

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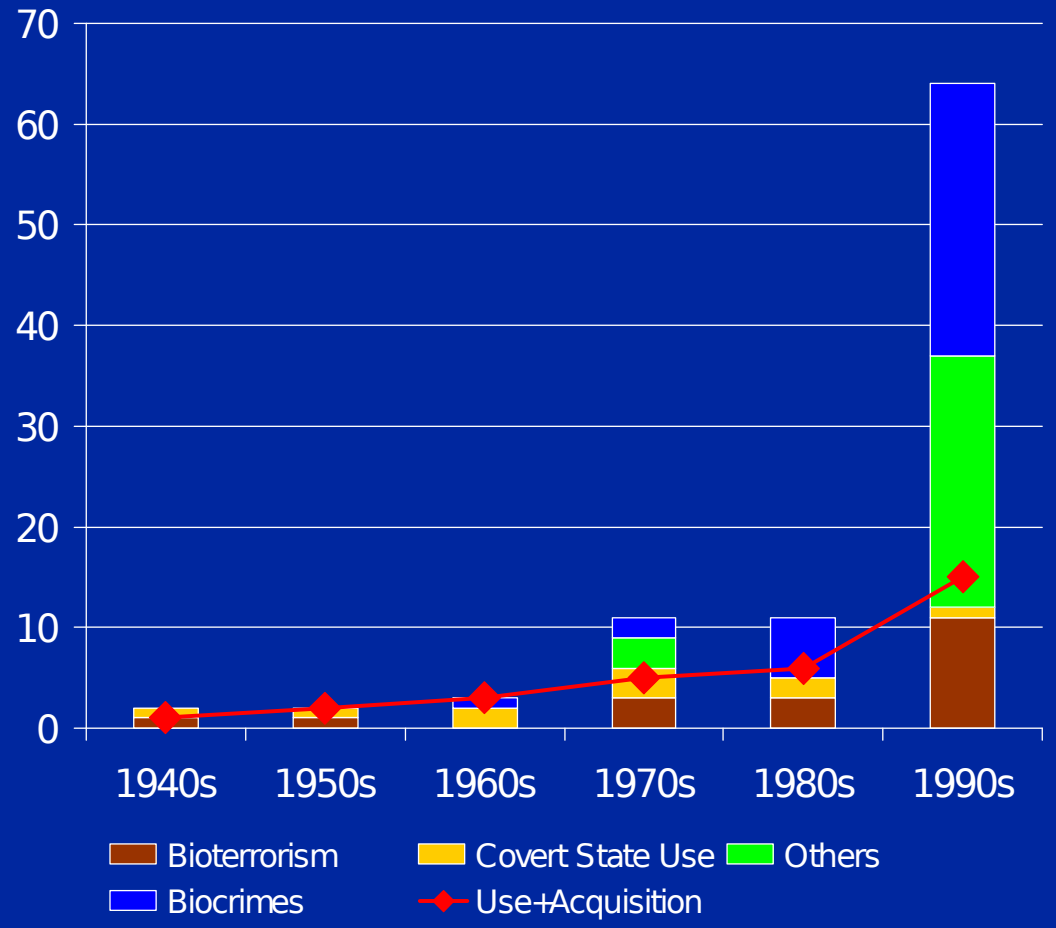
Biological Agent-Related Cases, by Decade, 1940-Present

- ✓ 1990s increase in cases
  - Growth in terrorist and criminal cases
  - Mostly hoaxes
- ✓ Data availability a problem
  - Past under-reporting
  - Current data incomplete



Biological Warfare

The intentional use of microorganisms or toxins derived from living organisms to produce death or disease in humans, animals, or plants

Biological Terrorism

The threat or use of biological agents by individuals or groups motivated by political, religious, ecological or other ideological objective.*

*** W. Seth Carus, 1998. Bioterrorism and Biocrimes, Center for Counterproliferation Research, National Defense University**

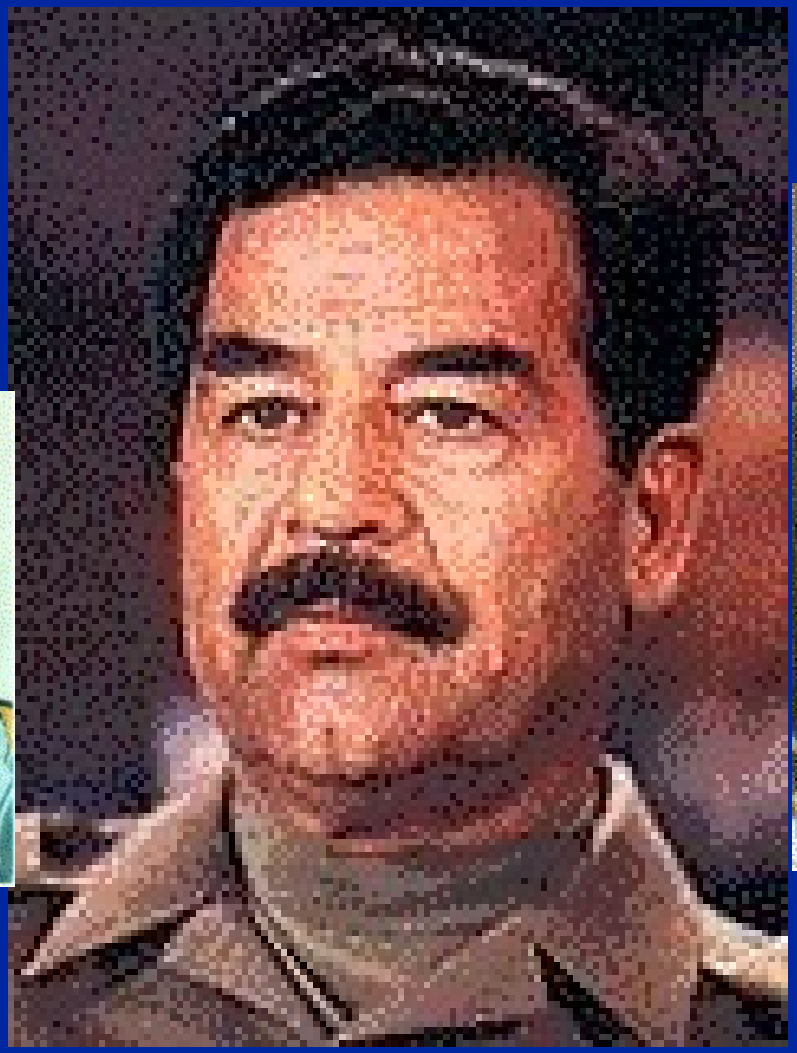
International Biological Weapons Programs

Known
- Iraq
- Russia

Probable
- China
- Iran
- North Korea
- Libya
- Syria
- Taiwan

Possible
- Cuba
- Egypt
- Israel

Source: Committee on Armed Services, House of Representatives. Special Inquiry into the Chemical and Biological Threat. Countering the Chemical and Biological Weapons Threat in the Post-Soviet World. Washington, D.C.: U.S. Government Printing Office; 23 Feb 1993. Report to the Congress.

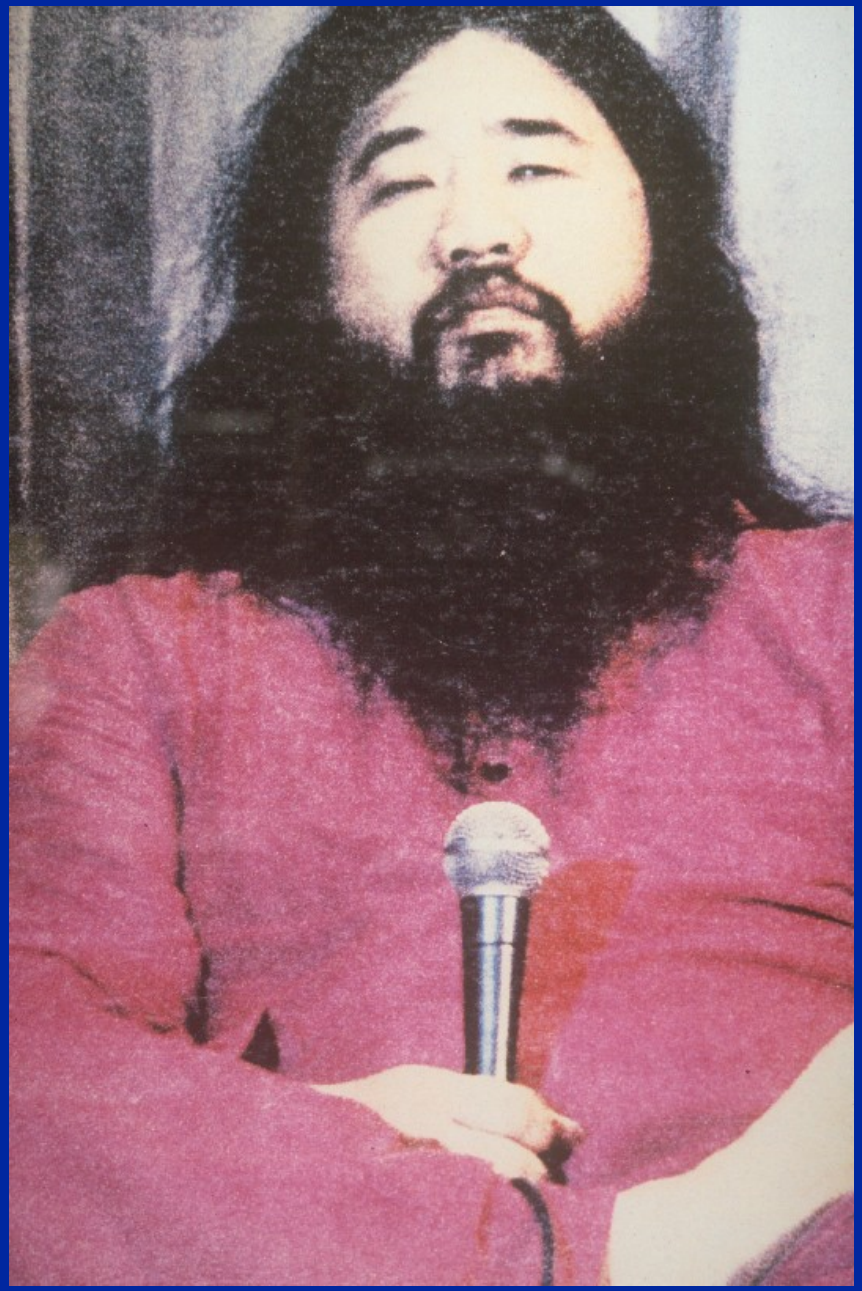


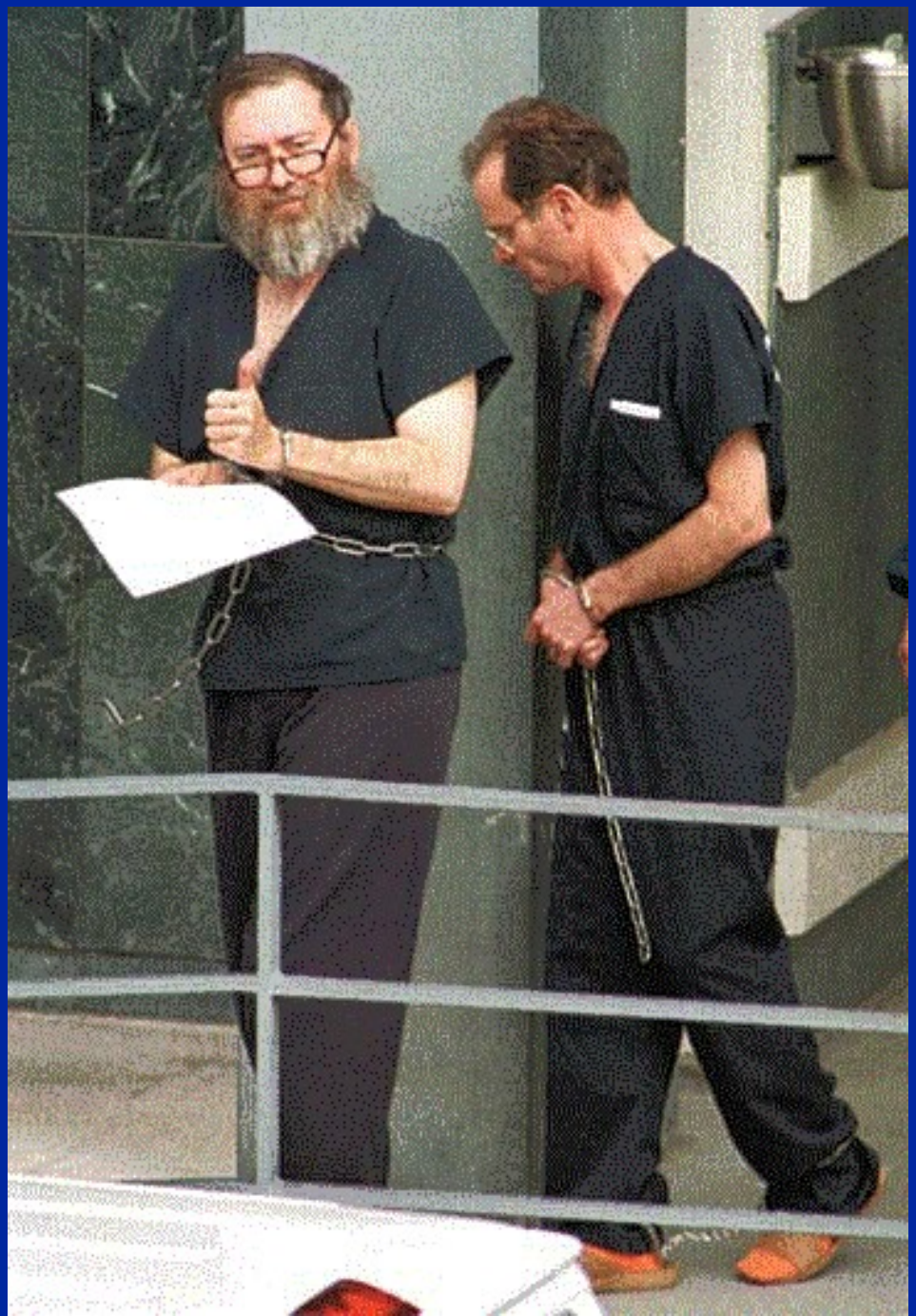
Offensive BW Program: Iraq

1995 disclosures to UNSCOM:

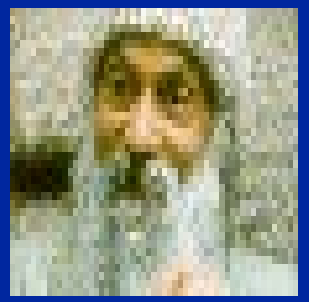
	Produced	Weaponized
Botulinum toxin	19,000 Liters	10,000 L
Anthrax spores	8,500 L	6,500 L
Aflatoxin	2,200 L	1,580 L

UN Doc S/1995/864, 11 OCT 1995

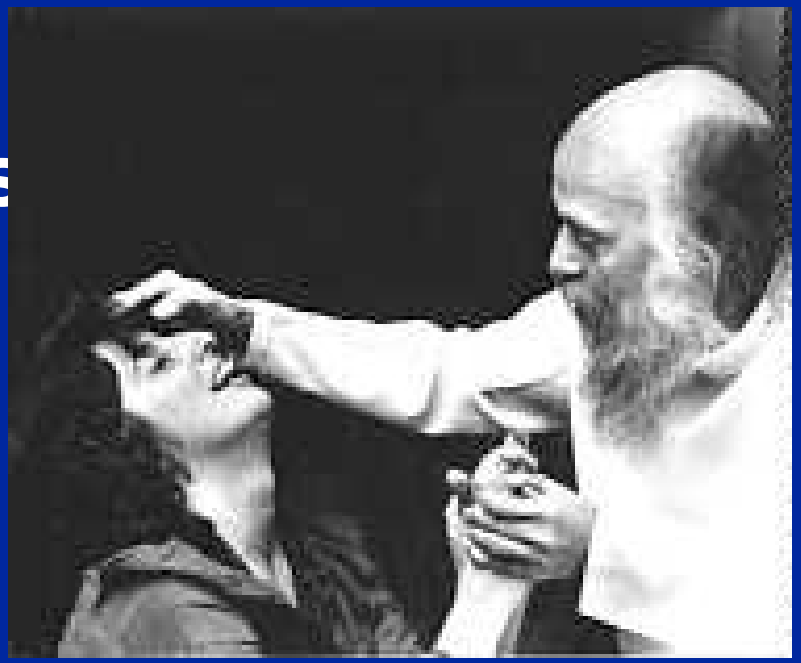




Rajneeshee Cult



- **Oregon, 1984**
- **Contaminated salad bars - *S. typhimurium***
- **751 cases of enteritis**



Recent Bioterrorist Activity

- ✓ 1998: Larry Wayne Harris, Las Vegas: avirulent anthrax
- ✓ 1997: Counter Holocaust Lobbyists of Hillel, B'nai B'rith Headquarters, Washington, D.C.: anthrax hoax
- ✓ 1997: James Dalton Bell: botulinum toxin & ricin
- ✓ 1995: Aum Shinrikyo Cult, Tokyo: anthrax, bot. toxin
- ✓ 1995: Larry Wayne Harris, Ohio: plague
- ✓ 1993: Thomas Lavy, Canada: ricin
- ✓ 1992: Minnesota Patriot's Council: ricin

Potential BW Agents*

Bacteria

- Anthrax
- Plague
- Q-Fever
- Brucellosis
- Tularemia
- Cholera

Viruses

- Smallpox
- Rift Valley Fever
- Crimean-Congo HF
- VEE

Toxins

- Botulinum
- Ricin
- SEB
- T2 Mycotoxins
- Saxitoxin
- *C. perfringens* toxins

* NATO AMedP-6(B)1996; Annex B unclassified
* Not to be interpreted as sanctioned “threat list”

Lethal vs. Incapacitating Agents

Lethal	Incapacitating
– Anthrax	– Q fever
– Tularemia	– SEB
– Plague	– VEE

Incapacitating agents may be more effective –

- Unit unable to perform mission
- Casualties consume scarce medical and evacuation assets

Destroyed U.S. Biological Warfare Agents

Lethal

- *B. anthracis*
- Botulinum toxins
- *F. tularensis*

Anticrop

- wheat stem rust
- rye stem rust
- rice blast

Incapacitating

- *Brucella suis*
- VEE virus
- SEB
- Q fever agent

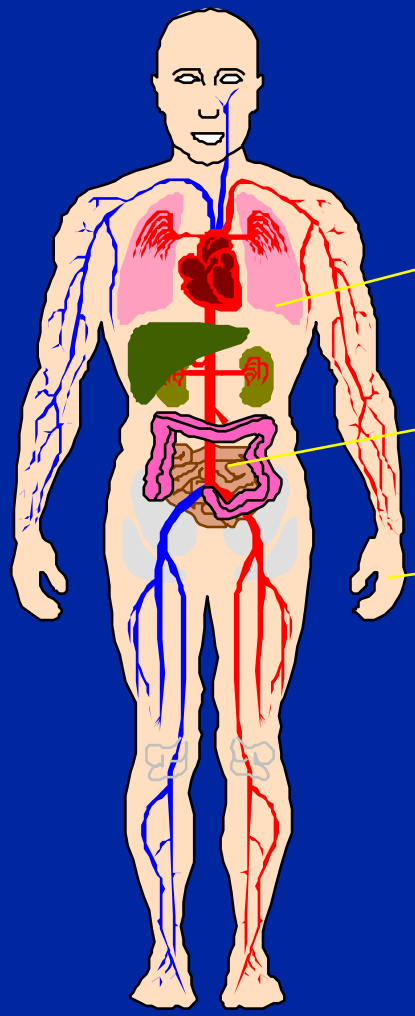
Soviet BW Priorities

"Agents Likely to be

Smallpox	26
Plague	23
Anthrax	21
Botulism	21
VEE	20
Tularemia	20
Q Fever	20
Marburg	18
Influenza	17
Melioidosis	17
Typhus	15

Vorobjev, A., et.al., "Criterion Rating" as a Measure of Probable Use of Bioagents as Biological Weapons, International Symposium, Severe Infection Diseases, Kirov, June 1997

PORTALS OF ENTRY OF BIOLOGICAL AGENTS

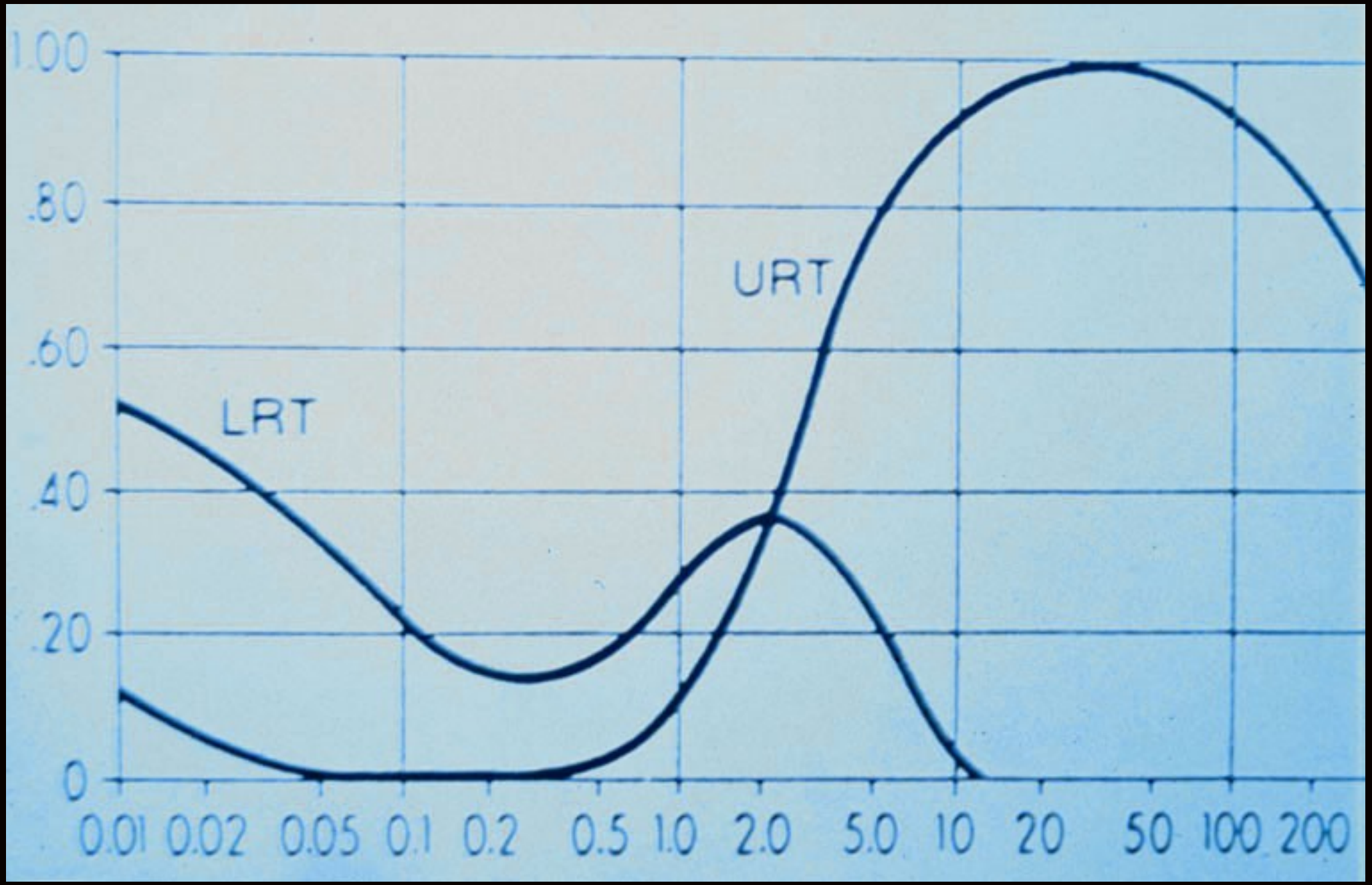


- RESPIRATORY TRACT (LUNGS)
- GASTROINTESTINAL TRACT
- SKIN / MUCUS MEMBRAN

Delivery Systems

- **Aerosol delivery: Optimal**
  - Generation of particles **1-5 microns**
    - Settle in lower respiratory tract
    - Not detectable by our senses
  - Larger - mucocilliary clearance
  - Smaller - exhaled

- **Explosive munitions: Poor delivery**
  - Heat, light from explosion inactivate agent
  - Inefficient production of particles of 1-5 u size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The Ag Pilatus Porter

Any Pilatus Porter can be converted to an Ag version and
standardized by the operator within a few hours. Two versi
are available:

Integral Tank

installed in the
cabin-compartment.
Capacity 1125 liters
(305 US Gal) stainless steel.

Pump SIMPLEX with impellers.

Spray boom for 62 nozzles
or 2 to 6 MICRONAIRS.

Operation ranges

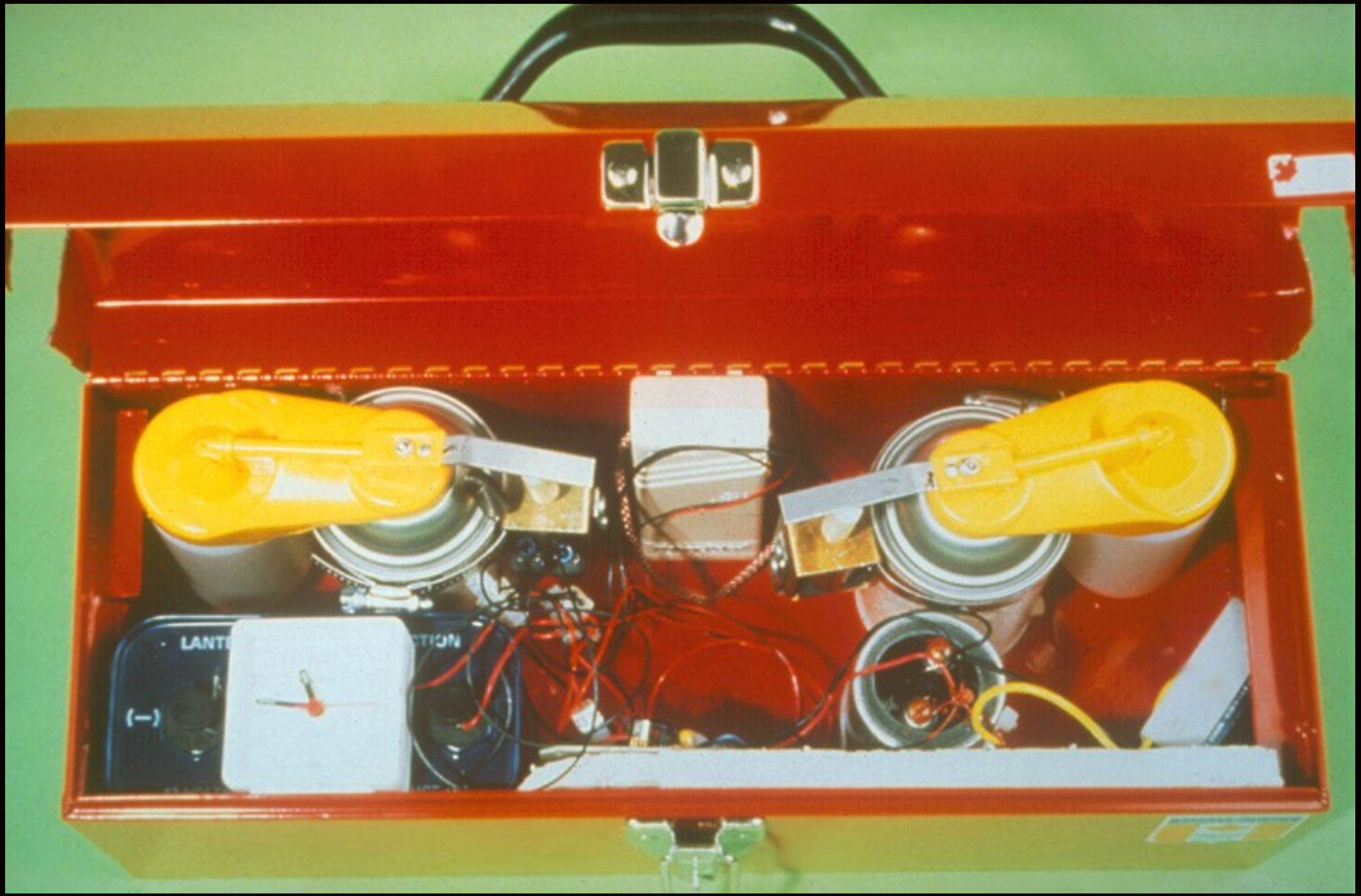
Self-contained

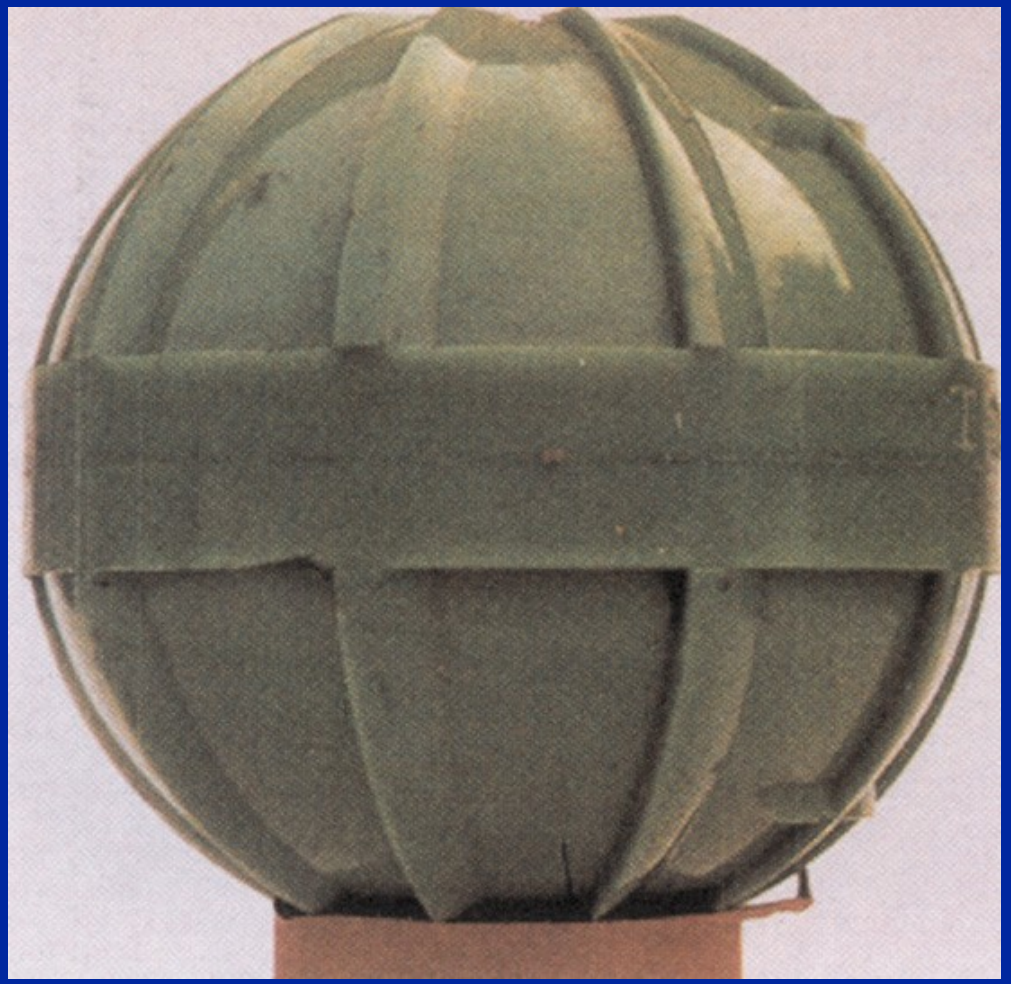
Underwing spray pod
MICRONAIR.

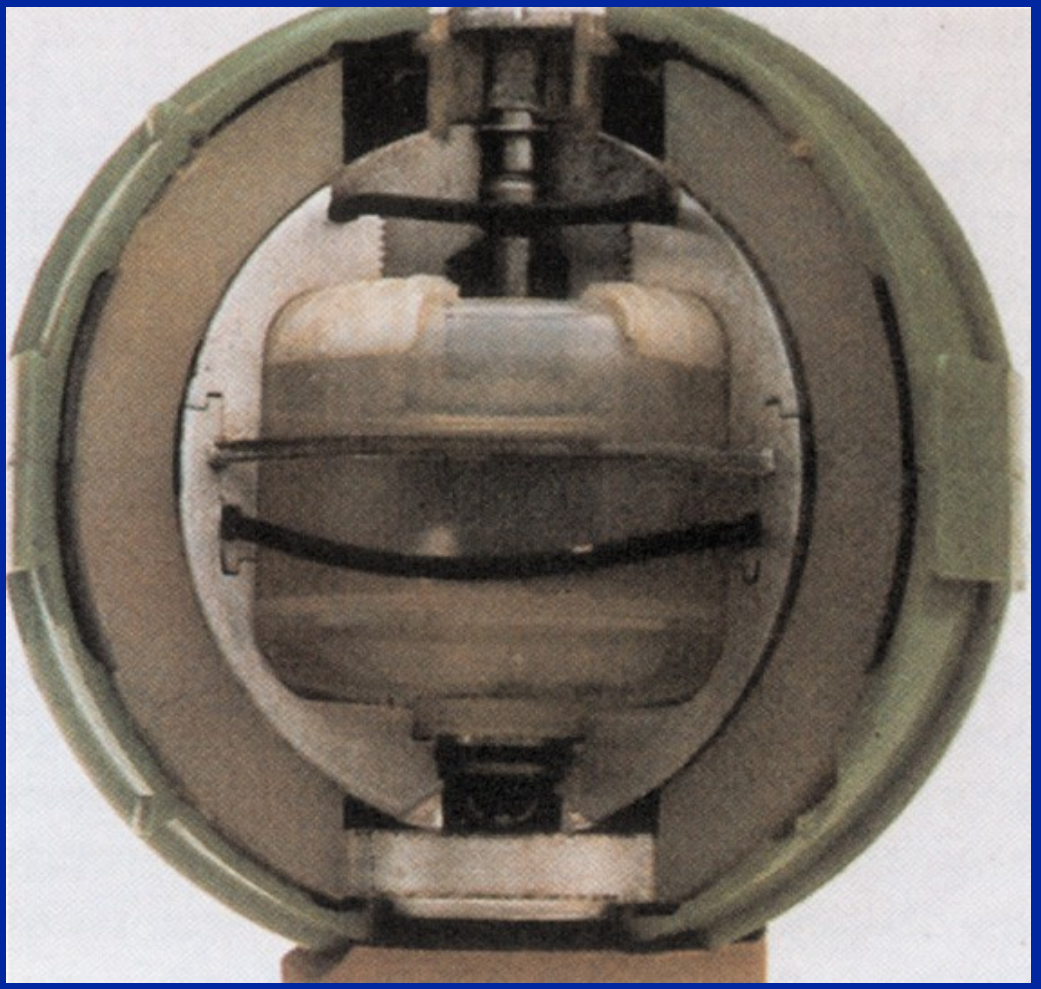
2 pods fixed on underwing
hard points.
Capacity 189 liters (50 US G
each.

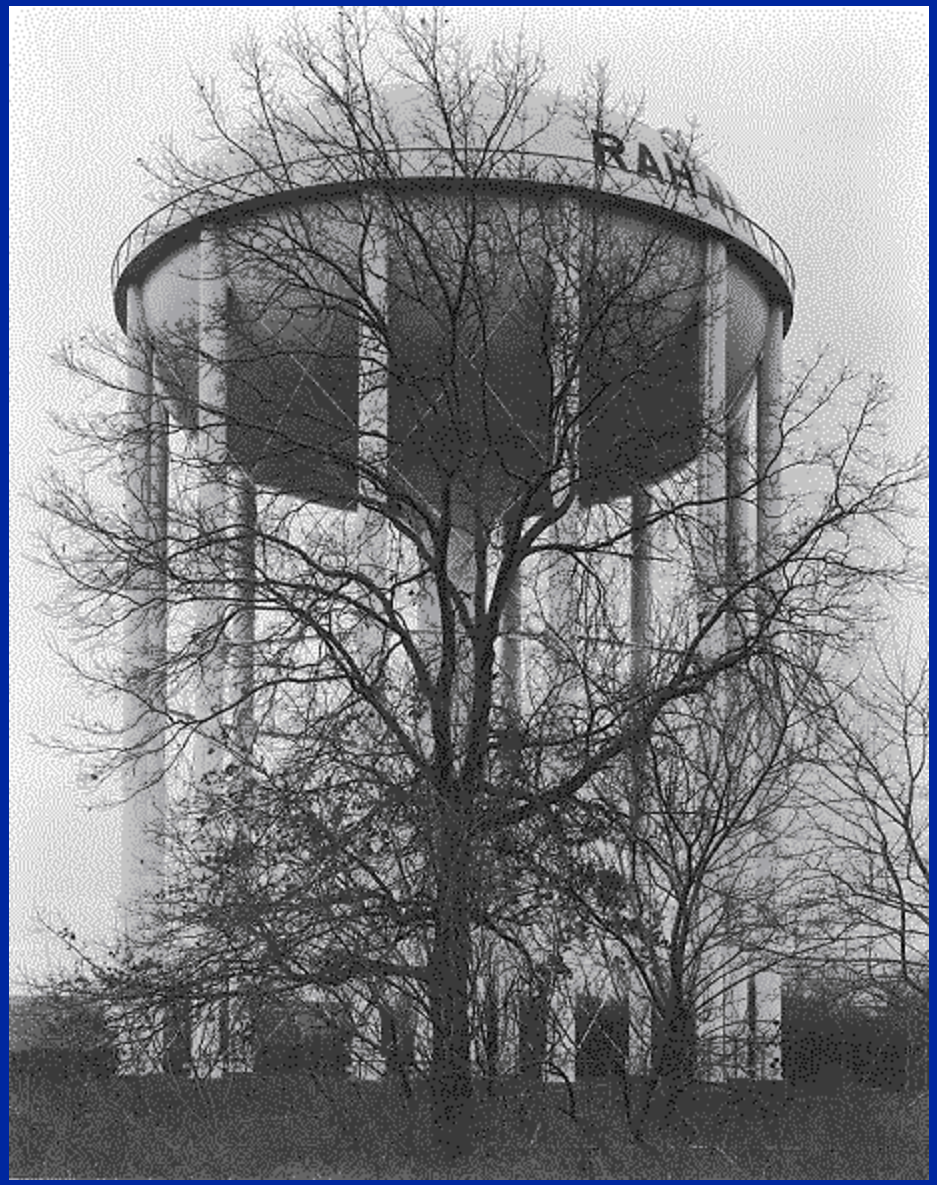
The atomizers MICRONAIR
AU 4000 have a variable ou

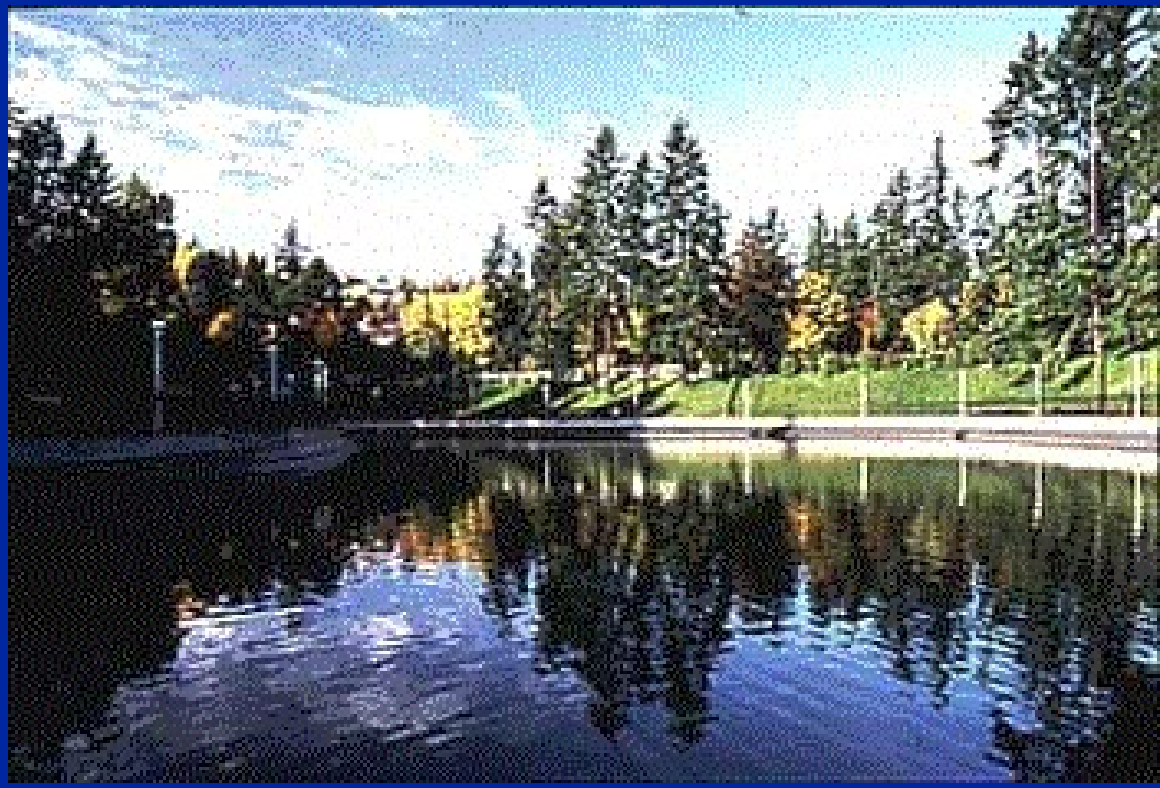
MICRO-SPRAY








RAH

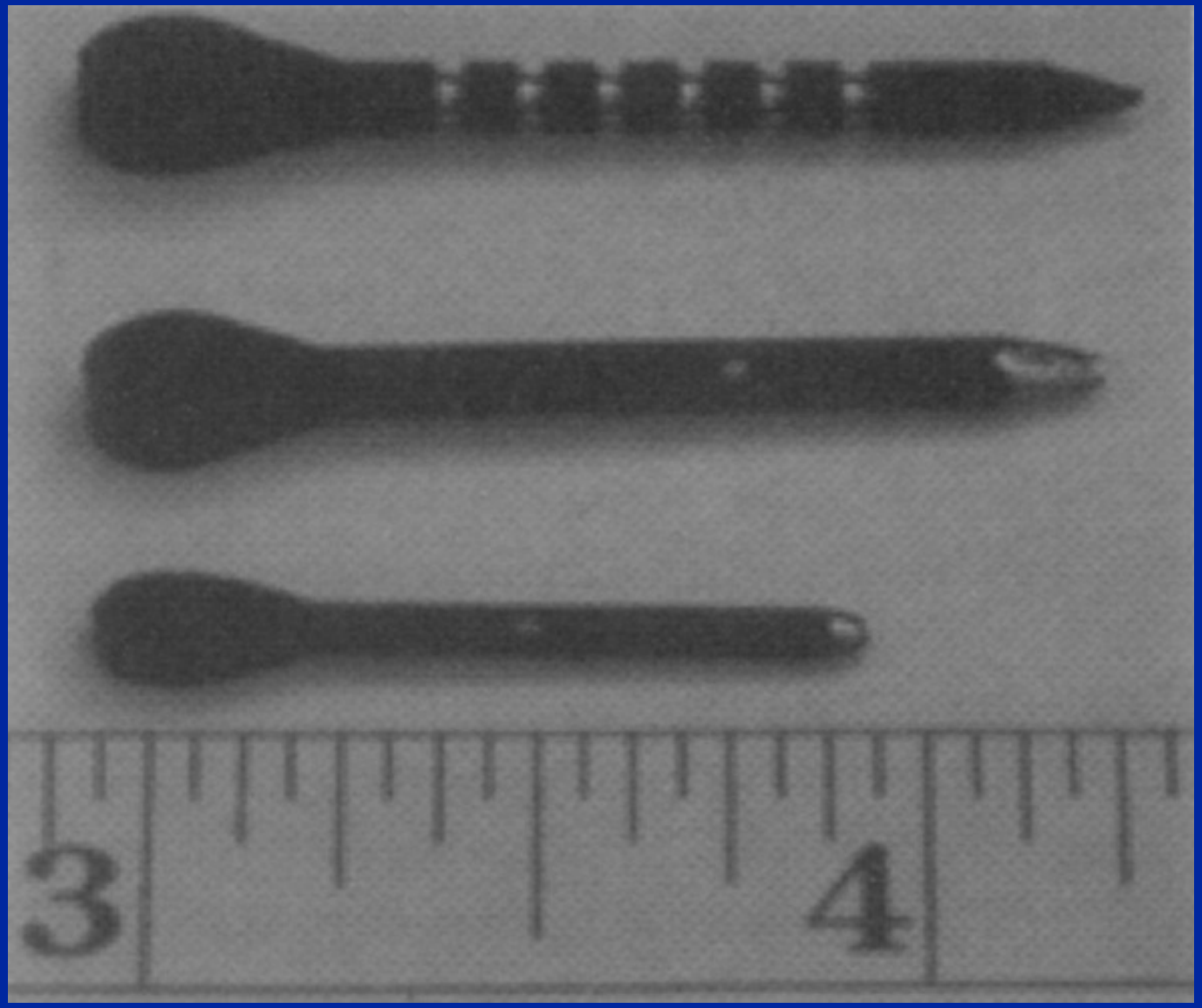


Water Purification Methods

- **Coagulation / Flocculation not effective for ricin, T-2 mycotoxins or saxitoxin**
- **Chlorine (5 mg/l; 5 ppm) for 30 min inactivates botulinum, but not ricin, T-2 mycotoxins or saxitoxin**
- **Reverse osmosis systems effective vs. ricin, T-2 mycotoxins, saxitoxin. (Probably effective vs. botulinum toxin and SEB but not tested)**

Dermal

- **Intact skin provides excellent barrier vs. BW agents (exception: mycotoxins)**
- **Mucous membranes, abrasions or other lesions can provide portal of entry**
- **Vector-borne delivery (unlikely)**
- **Injection (assassination)**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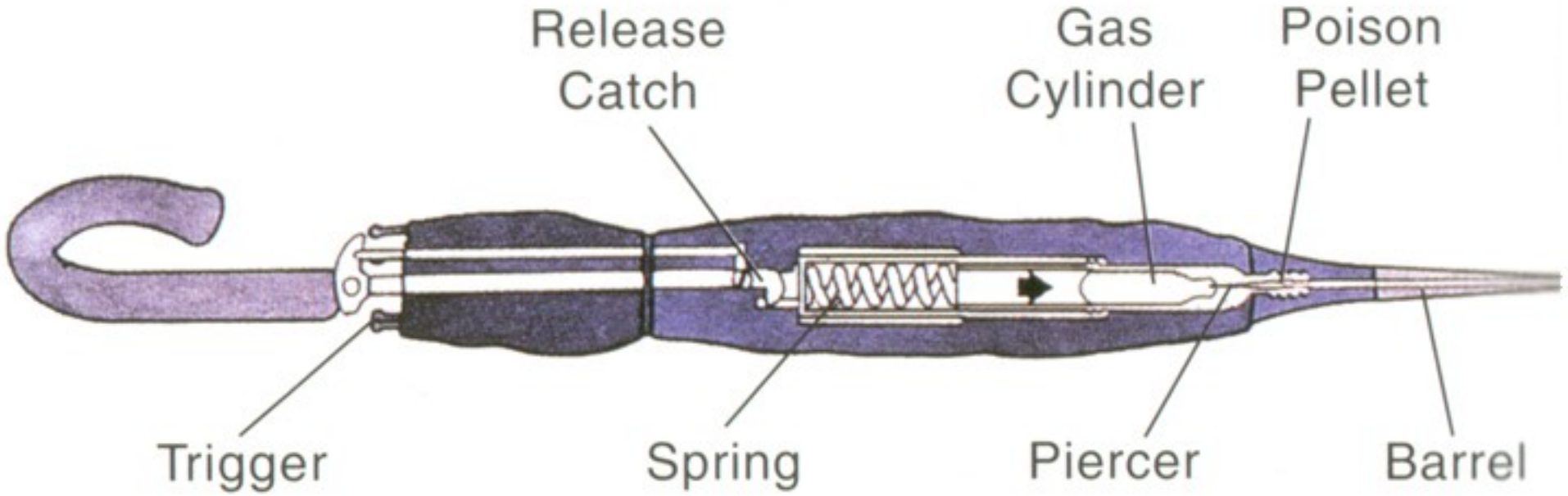

Release
Catch
Gas
Cylinder
Poison
Pellet
Trigger
Spring
Piercer
Barrel

Acquisition of Etiologic Agents

- Field samples or clinical specimens
- Commercial biological supply houses
- Multiple culture collections
- Universities
- Foreign laboratories

For Quality Cultures, Come To The Source

ATCC

To order, Call 800-638-6597
or telex 908768 ATCCROVE

American Type Culture Collection
12301 Parklawn Drive, Rockville, MD 20852

Sources of Agents for Terrorism Use

- ✓ **World Directory of Collections of Cultures and Microorganisms**
  - 453 worldwide repositories in 67 nations
  - 54 ship/sell anthrax
  - 18 ship/sell plague
- ✓ **International black-market sales associated with governmental programs**

Ricin

Low Cost

Costs* of producing mass casualties per square kilometer by weapon type:

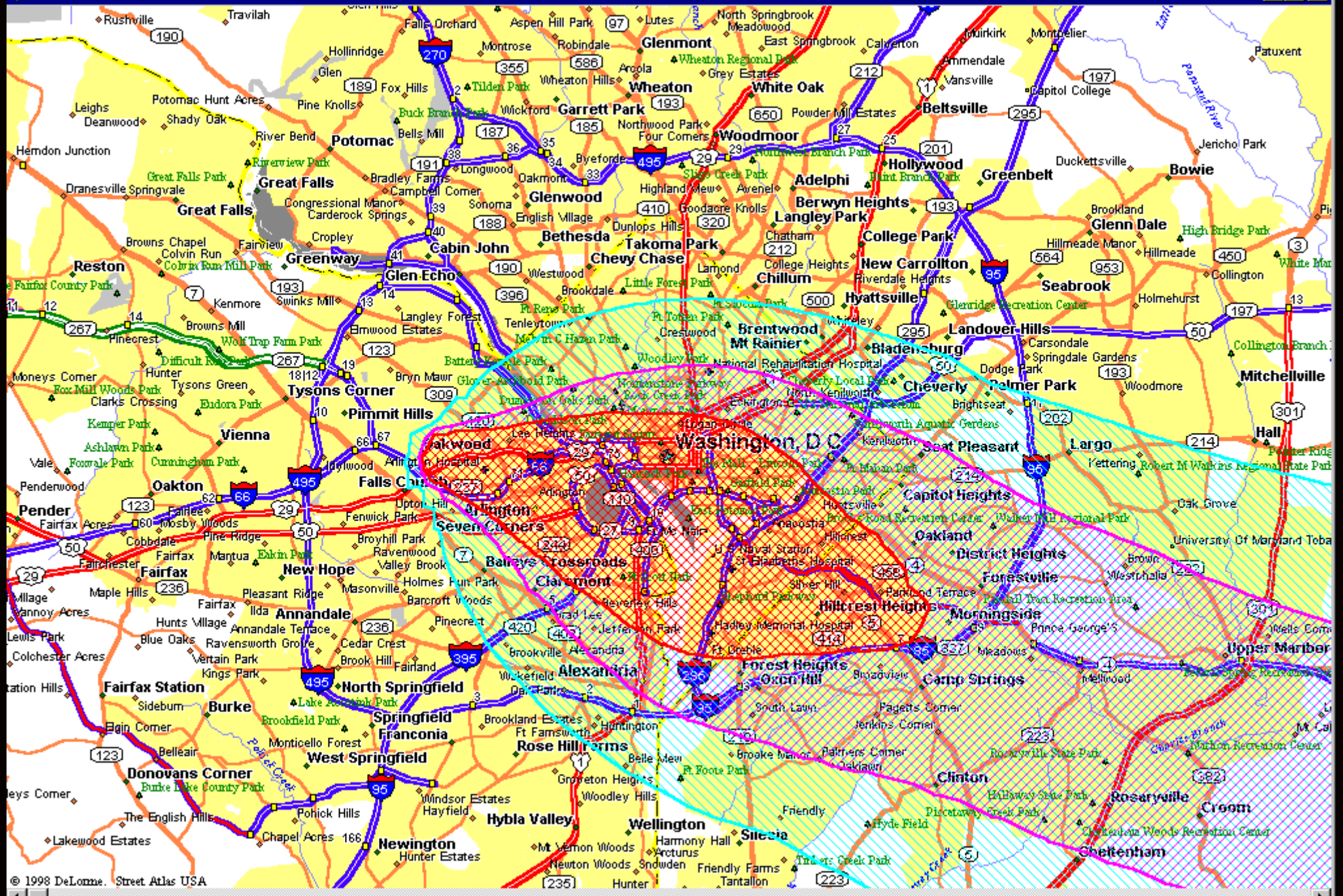
Conventional	**$2000**
Nuclear	**800**
Chemical	**600**
Biological	**1**

*** Chemical-Biological Expert Panel, UN, 1969**

Hypothetical Dissemination by Airplane of 50 kg of Agent Along a 2 km Line Upwind of a Population Center of 500,000*

Agent	Downwind Reach (km)		Dead
	Incapacitated		
Rift Valley Fever	1	400	35,000
Tick-borne enceph.	1	9,500	35,000
Typhus	5	19,000	85,000
Brucellosis	10	500	100,000
Q-fever	>20	150	125,000
Tularemia	>20	30,000	125,000
Anthrax	>>20	95,000	125,000

*Health Aspects of Chemical and Biological Weapons, WHO, 1970


DC11001
Washington, D.C.
Arlington
Alexandria
Falls Church
Fairfax
Tysons Corner
Vienna
Reston
Great Falls
Potomac
Bethesda
Chevy Chase
Takoma Park
Silver Spring
Wheaton
Glenmont
Kensington
Rockville
Gaithersburg
Germantown
Clarksburg
Frederick
Hagerstown
Leesburg
Manassas
Fredericksburg
Annapolis
Baltimore
Columbia
Ellicott City
Laurel
Bowie
Greenbelt
College Park
Hyattsville
Landover Hills
Seabrook
New Carrollton
Cheverly
Palmer Park
Capitol Heights
Seat Pleasant
Largo
Mitchellville
Upper Marlboro
Camp Springs
Forestville
District Heights
Oxon Hill
Fort Washington
Clinton
Rosaryville
Croom
Cheltenham
Brandywine
Waldorf
La Plata
Charles Town
Shepherdstown
Harpers Ferry
Winchester
Front Royal
Luray
Woodstock
Strasburg
Middletown
Berryville
Purcellville
Round Hill
Lovettsville
Hamilton
Aldie
Middleburg
Upperville
Paeonian Springs
Hillsboro
Waterford
Lucketts
Lovettsville
Point of Rocks
Brunswick
Jefferson
Knoxville
Petersburg
Boonsboro
Sharpsburg
Antietam National Battlefield
Williamsport
Hancock
Clear Spring
Big Pool
Cumberland
Frostburg
Oakland
Deep Creek Lake
Swanton
Grantsville
Accident
Kitzmiller
Thomas
Davis
Canaan Valley
Harman
Parsons
Elkins
Beverly
Philippi
Buckhannon
Weston
Jane Lew
Bridgeport
Clarksburg
Fairmont
Morgantown
Mannington
Grafton
Kingwood
Terra Alta
Rowlesburg
Albright
Masontown
Uniontown
Brownsville
Fayette City
Perryopolis
Connellsville
Dawson
Normalville
Mount Pleasant
Scottdale
Jeannette
Greensburg
Latrobe
Ligonier
Donegal
Somerset
Berlin
Meyersdale
Confluence
Ohiopyle
Farmington
Chalk Hill
Dunbar
Smithfield
Point Marion
Fairchance
Hopwood
Republic
Perryopolis
Belle Vernon
Monessen
Charleroi
Donora
Monongahela
Washington
Canonsburg
Bridgeville
Carnegie
Pittsburgh
Mount Lebanon
Upper St Clair
Bethel Park
South Park
Library
Finleyville
Elizabeth
McKeesport
Duquesne
Homestead
Braddock
North Versailles
Monroeville
Penn Hills
Verona
Oakmont
Aspinwall
Sharpsburg
Etna
Millvale
Ross
Shaler
Wexford
Pine
McCandless
Hampton
Allison Park
Gibsonia
Cheswick
Springdale
Harmar
Natrona Heights
Tarentum
New Kensington
Arnold
Lower Burrell
Upper Burrell
Leechburg
Vandergrift
Apollo
Saltsburg
Blairsville
Indiana
Kittanning
Ford City
Ford Cliff
Rural Valley
Mahaffey
Clearfield
Curwensville
Houtzdale
Ebensburg
Carrolltown
Loretto
Cresson
Gallitzin
Altoona
Hollidaysburg
Tyrone
Bellwood
Martinsburg
Roaring Spring
Williamsburg
Huntingdon
Mount Union
Lewistown
Reedsville
Belleville
McVeytown
Mifflintown
Port Royal
Thompsontown
Lewistown
Milroy
Mifflin
Newport
Duncannon
Carlisle
Mechanicsburg
Camp Hill
Lemoyne
New Cumberland
Wormleysburg
Harrisburg
Hummelstown
Palmyra
Annville
Lebanon
Cornwall
Mount Gretna
Elizabethtown
Middletown
Hershey
Campbelltown
Myerstown
Womelsdorf
Robesonia
Wernersville
Sinking Spring
Wyomissing
Reading
Shillington
Lyons
Hamburg
Kutztown
Fleetwood
Topton
Boyertown
Douglassville
Pottstown
Limerick
Royersford
Phoenixville
Valley Forge
King of Prussia
Wayne
Radnor
Bryn Mawr
Haverford
Ardmore
Lansdowne
Upper Darby
Drexel Hill
Clifton Heights
Aldan
Yeadon
Darby
Collingdale
Sharon Hill
Folcroft
Norwood
Glenolden
Prospect Park
Ridley Park
Eddystone
Chester
Upland
Marcus Hook
Trainer
Linwood
Boothwyn
Brookhaven
Media
Glen Mills
Concordville
Chadds Ford
Kennett Square
Avondale
West Grove
Oxford
Elkton
Rising Sun
North East
Perryville
Havre de Grace
Aberdeen
Bel Air
Fallston
Forest Hill
Jarrettsville
Whiteford
Dublin
Pylesville
Street
Darlington
Delta
Peach Bottom
Quarryville
Lancaster
Manheim
Lititz
Ephrata
Adamstown
Denver
Ephrata
Akron
Lititz
Manheim
Mount Joy
Elizabethtown
Columbia
Marietta
Mount Joy
Conestoga
Strasburg
Paradise
Intercourse
Bird-in-Hand
Gordonville
New Holland
Blue Ball
Morgantown
Honey Brook
Coatesville
Downingtown
Exton
Malvern
Paoli
Berwyn
Devon
Strafford
Wayne
Villanova
Bryn Mawr
Haverford
Ardmore
Narberth
Merion
Wynnewood
Overbrook
Lower Merion
Gladwyne
Penn Valley
Bala Cynwyd
Wynnewood
Ardmore
Haverford
Bryn Mawr
Rosemont
Villanova
Radnor
Wayne
Strafford
Devon
Berwyn
Paoli
Malvern
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Coatesville
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Marcus Hook
Upland
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Eddystone
Ridley Park
Prospect Park
Glenolden
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Sharon Hill
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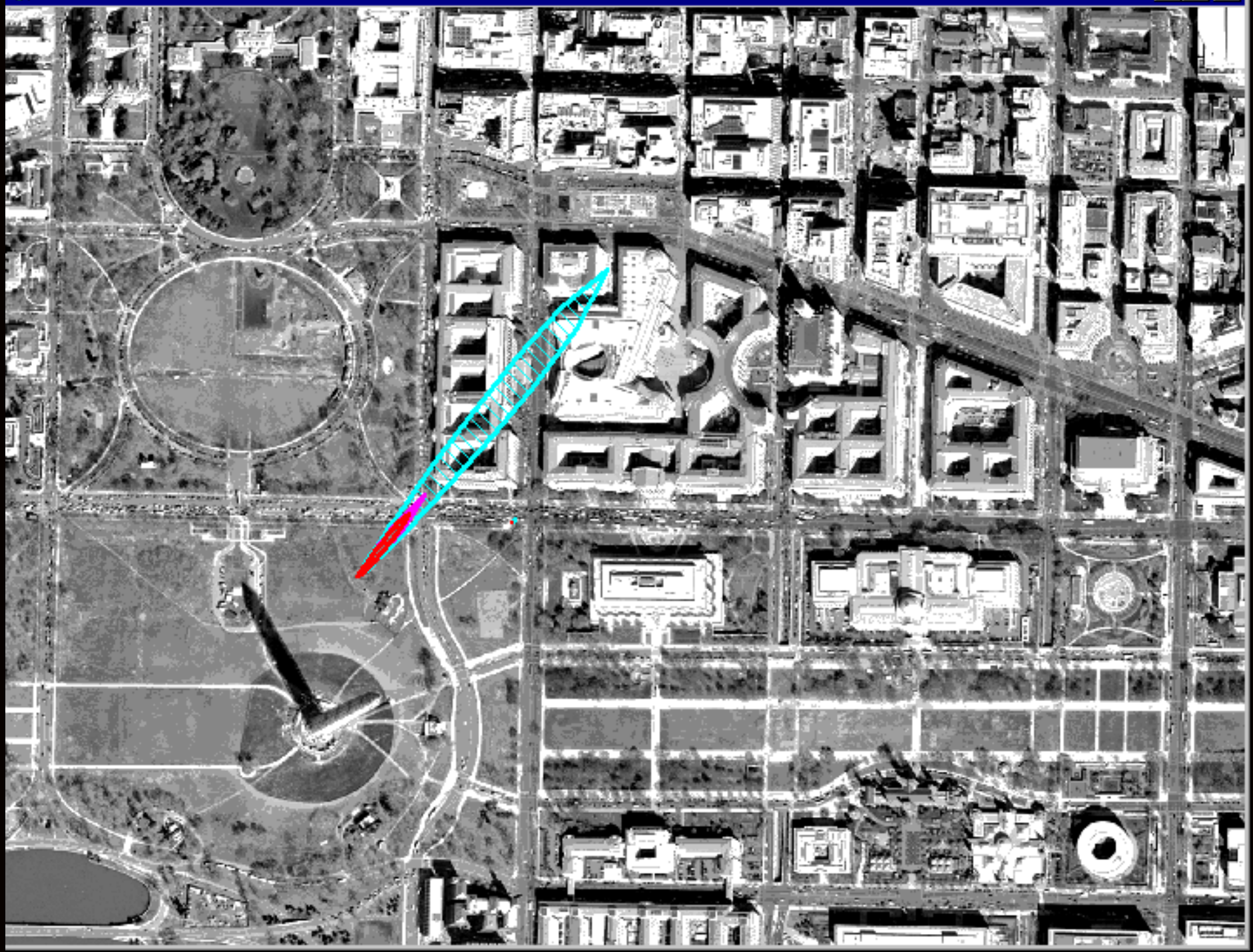
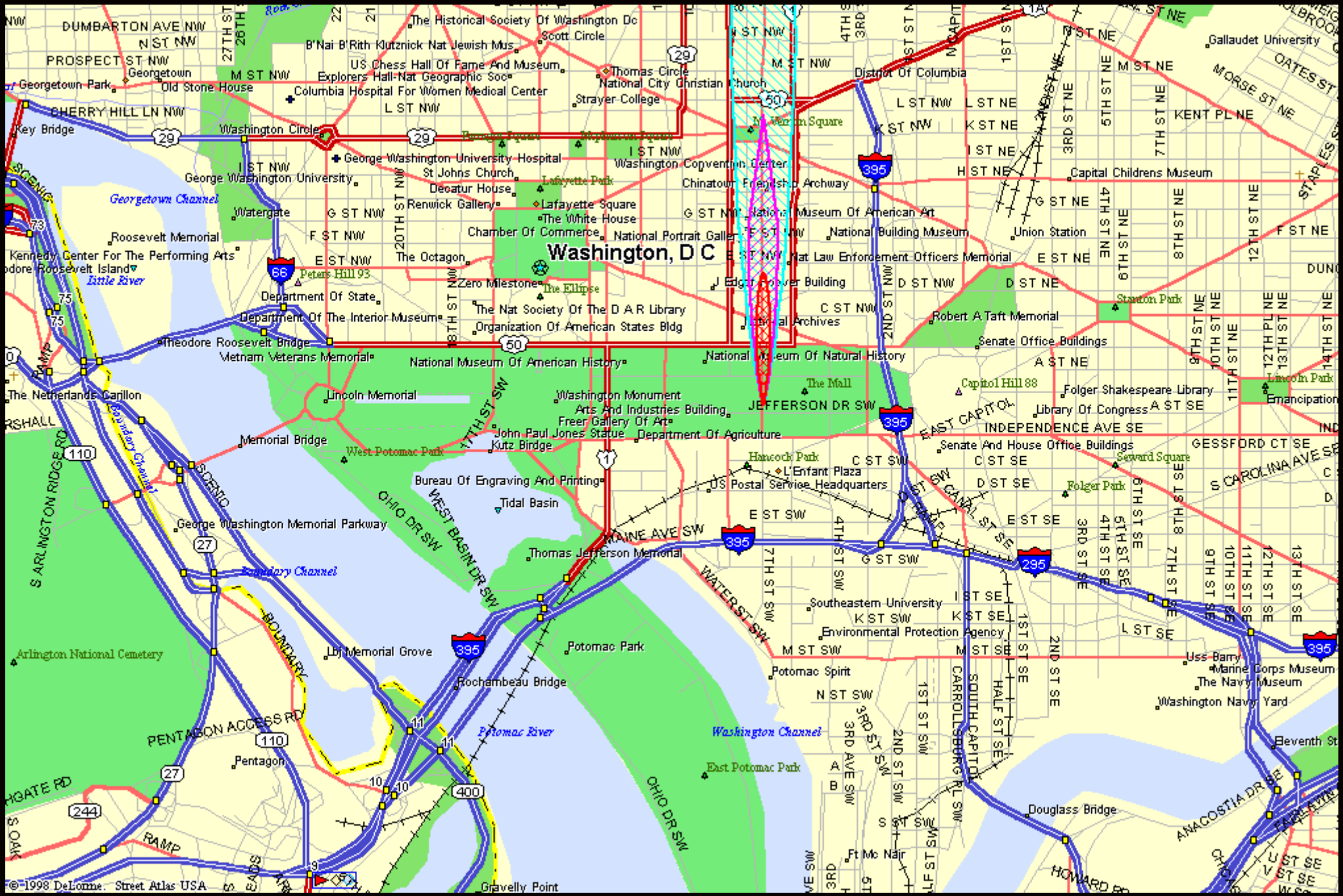
Darby
Yeadon
Aldan
Clifton Heights
Drexel Hill
Upper Darby
Lansdowne

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PROSPECT ST NW
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Georgetown Park
Old Stone House
CHERRY HILL LN NW
Key Bridge
M ST NW
L ST NW
I ST NW
G ST NW
F ST NW
E ST NW
Washington Circle
George Washington University
George Washington University Hospital
St Johns Church
Decatur House
Renwick Gallery
Lafayette Square
The White House
Chamber Of Commerce
The Octagon
Zero Milestone
The Ellipse
Department Of State
Department Of The Interior Museum
The Nat Society Of The D A R Library
Organization Of American States Bldg
Peters Hill 93
Roosevelt Memorial
Watergate
Kennedy Center For The Performing Arts
Theodore Roosevelt Island
Little River
Georgetown Channel
Theodore Roosevelt Bridge
Vetnam Veterans Memorial
National Museum Of American History
The Historical Society Of Washington Dc
Scott Circle
B'Nai B'Rith Klutznick Nat Jewish Mus
US Chess Hall Of Fame And Museum
Explorers Hall-Nat Geographic Soc
Columbia Hospital For Women Medical Center
Strayer College
Thomas Circle
National City Christian Church
Mount Vernon Square
Washington Convention Center
Chinatown Friendship Archway
National Museum Of American Art
National Portrait Gallery
J Edgar Hoover Building
National Archives
The Mall
Washington Monument
Arts And Industries Building
Freer Gallery Of Art
John Paul Jones Statue
Department Of Agriculture
Lincoln Memorial
Memorial Bridge
West Potomac Park
Kutz Bridge
Bureau Of Engraving And Printing
Tidal Basin
George Washington Memorial Parkway
Thomas Jefferson Memorial
Ohio Dr SW
West Basin Dr SW
Maine Ave SW
Boundary Channel
Arlington National Cemetery
Lbj Memorial Grove
Potomac Park
Rochambeau Bridge
Pentagon
Pentagon Access Rd
Potomac River
Washington Channel
East Potomac Park
Gravelly Point
Ohio Dr SW
Ft Mc Nair
Douglass Bridge
Anacostia Dr SE
Howard Rd
Potomac Spirit
Environmental Protection Agency
Southeastern University
Uss Barry
Marine Corps Museum
The Navy Museum
Washington Navy Yard
Eleventh St
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Folger Shakespeare Library
Library Of Congress
Senate And House Office Buildings
Senate Office Buildings
Robert A Taft Memorial
Capital Childrens Museum
Union Station
Nat Law Enforcement Officers Memorial
National Building Museum
National Museum Of Natural History
US Postal Service Headquarters
L'Enfant Plaza
Hancock Park
Seward Square
Folger Park
Stanton Park
Lincoln Park
Emancipation
Gallaudet University
District Of Columbia
Capitol
Independence Ave SE
East Capitol St
Canal St SE
Waterst SW
Jefferson Dr SW
Constitution Ave NW
Scenic
Boundary
Ramp
Gessford Ct SE
Carolina Ave SE
Oates St
Morse St NE
Kent Pl NE
Staples St
Dunc
Ind
Douglass Bridge
Uss Barry
Marine Corps Museum
The Navy Museum
Washington Navy Yard
Eleventh St
Capitol Hill 88
Folger Shakespeare Library
Library Of Congress
Senate And House Office Buildings
Senate Office Buildings
Robert A Taft Memorial
Capital Childrens Museum
Union Station
Nat Law Enforcement Officers Memorial
National Building Museum
National Museum Of Natural History
US Postal Service Headquarters
L'Enfant Plaza
Hancock Park
Seward Square
Folger Park
Stanton Park
Lincoln Park
Emancipation
Gallaudet University
District Of Columbia
Capitol
Independence Ave SE
East Capitol St
Canal St SE
Waterst SW
Jefferson Dr SW
Constitution Ave NW
Scenic
Boundary
Ramp
Gessford Ct SE
Carolina Ave SE
Oates St
Morse St NE
Kent Pl NE
Staples St
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Impact of BW on Healthcare System

- **Terror** in the affected population and in the medical care system
- **Overwhelming numbers**, ICU demands, or special medication needs
- Need for **personal protection** in medical care, clinical lab, autopsy suites
- Problems with **handling remains**

Is BW the Ultimate Weapon?

- Easy to obtain
- Relatively easy and inexpensive to produce
- Readily available delivery modes
- Dissemination over large areas without detection
- Large numbers of casualties possible
- Even threat of use would create fear, panic
- Perpetrators could escape days before effects seen

Countering Bioterrorism

Through Integration and Teamwork

Intelligence

- Agent
- Delivery System
- Organization
- Time

Medical Countermeasures

- Vaccines / Prophylaxis
- Diagnostics
- Therapeutics

Education & Training

- Military and Civilian Health Care Providers
- Electronic Communication

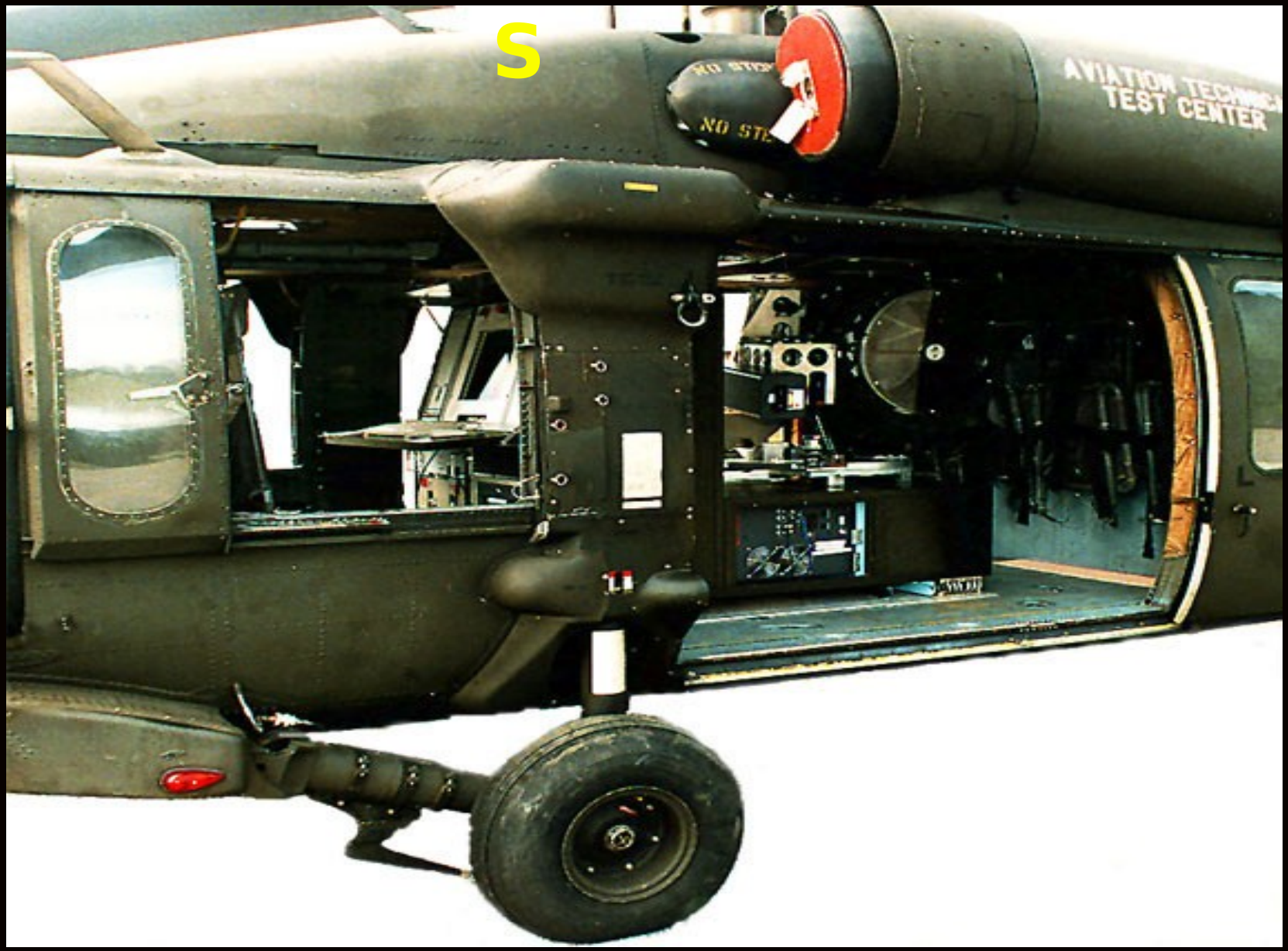
Physical Countermeasures

- Detection
- Physical Protection
- Decontamination

CVS pharmacy
PENNSYLVANIA
1200

BIDS

LRBSD
S

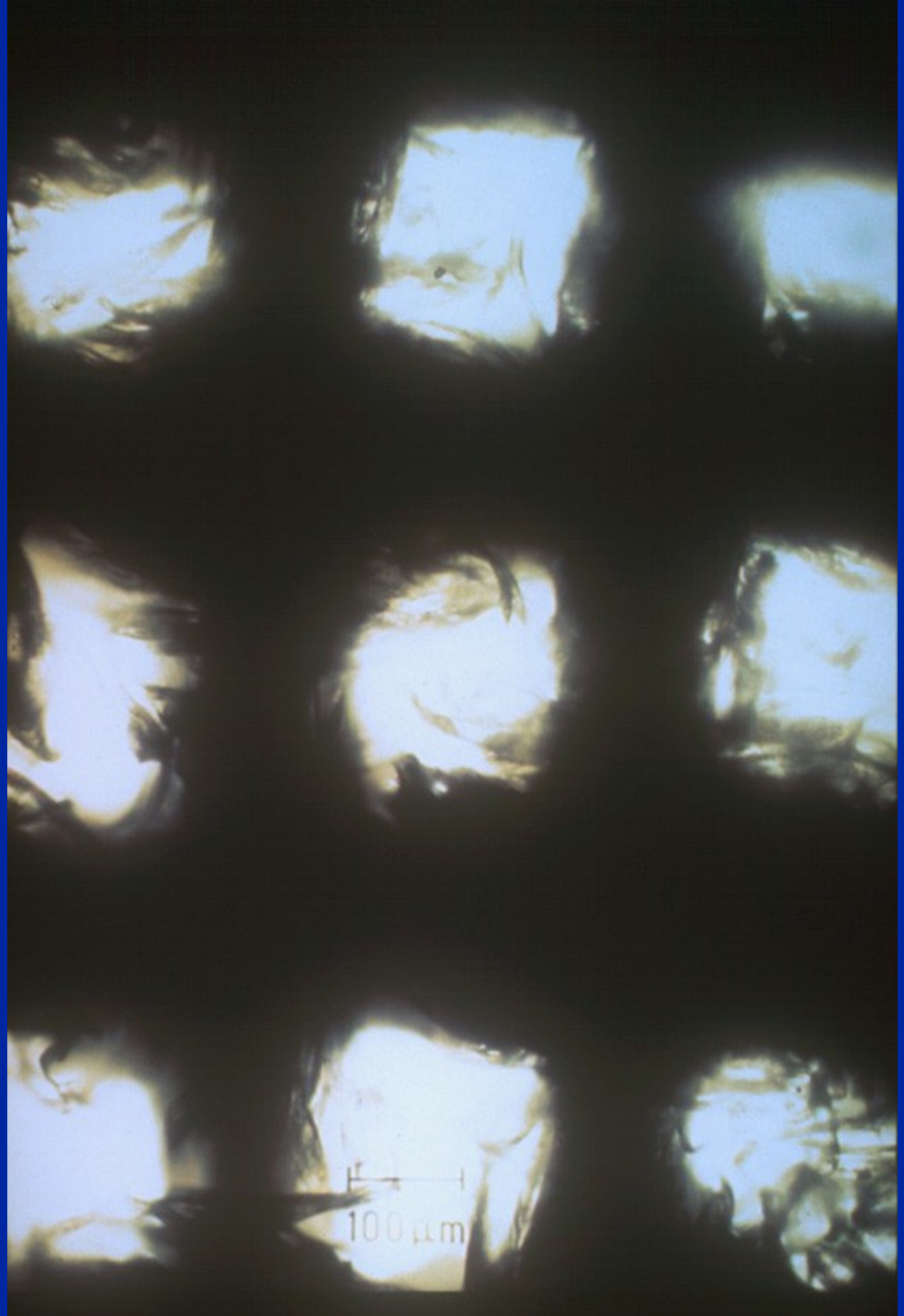


Improvised Airways Protection for Toxin Aerosols

Airways Protection	*Time to Death*
Ricin (large protein)	
– Control Animals	48-72 hr (n-6)
– 1 Layer T-shirt	55, 70 hr and 6 days
– 1 Layer Cravat	72 & 72 hr; One Survived
– 2 Layer T-shirt	All Survived (n=3)
– 2 Layer Cravat	All Survived (n=3)
Saxitoxin (low molecular weight)	
– Control Animals	6-10 min (n=4)
– 2 Layer T-shirt	All Survived (n=4)
– 2 Layer Cravat	All Survived (n=4)

Creasia, Donald A., Personal Communication, 1995.

USAMRIID


100 µm

Environmental Contamination

- BW agents nonvolatile
- Vehicular dusts - likely low risk
- Normal soil microflora - low risk
- Degradation
  - Solar UV light
  - Competing soil microflora
  - Rain, heat, soil pH

Medical Biological Defense

BW Vaccine Status

Licensed

- Anthrax (BioPort Corp.)
- Plague (Greer Laboratories)
- Smallpox (Wyeth Laboratories)

IND

- Tularemia
- Venezuelan Equine Encephalitis (VEE)
- Eastern Equine Encephalitis (EEE)
- Western Equine Encephalitis (WEE)
- Q-Fever *(Coxiella burnetii)*
- Botulinum Toxoids
- Smallpox (cell culture derived)

Emerging

- Botulinum (recombinant C fragment)
- Anthrax (Recombinant PA)
- VEE, EEE, WEE (recombinants)
- Staphylococcal Enterotoxins (recombinants)
- Plague (F1-V antigen)
- Ricin (A Subunit)
- Filovirus (Ebola, Marburg)
- Multi-Valent and Improved Vaccine Presentation

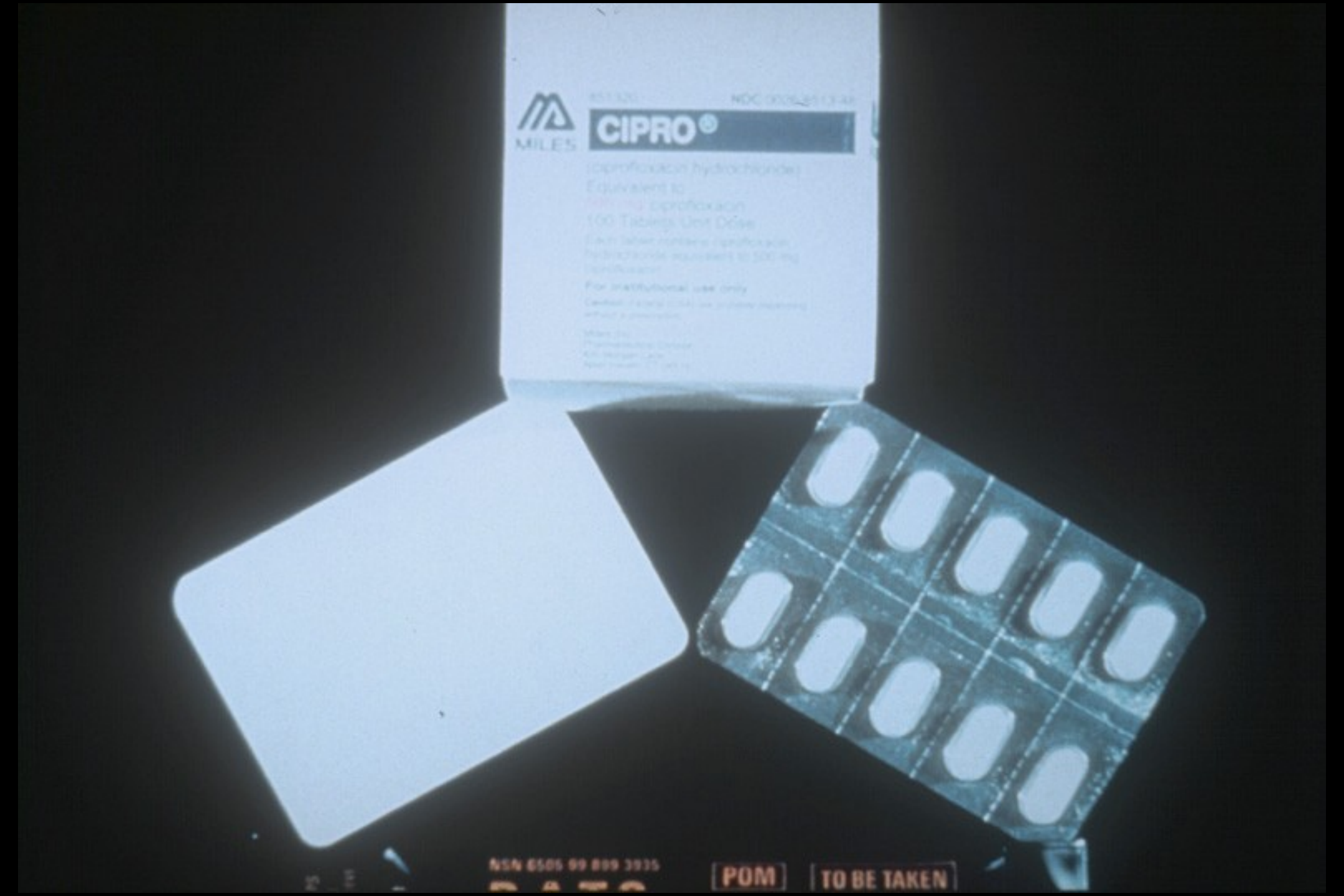
Multi-Agent Vaccine for Biological Threat Agents

- Naked DNA Vaccines
- Replicon Vaccines

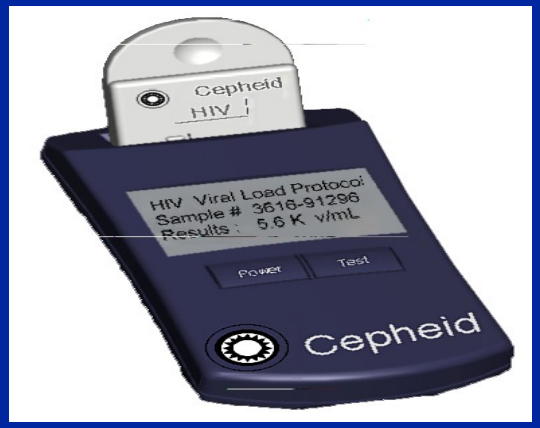
- ✓ **Fewer Immunizatio**
- ✓ **Lower Cost**
- ✓ **Can Custom Design**
- ✓ **Enhanced Operational Readiness**

USAMRIID

Putting the Soldier First


MILES
CIPRO®
NSN 6505 99 899 3935
POM
TO BE TAKEN

Rapid and Confirmatory Diagnostics



- ✓ Development and evaluation of diagnostic assays
- ✓ Technologies field-tested with Theater Area Medical Laboratory
- ✓ DOD Reference laboratory for biological agent confirmation
- ✓ Special laboratories to safely handle highly hazardous organisms

BW Attack or Naturally Occurring Disease?

- Higher morbidity & mortality than normally expected for a disease
- High attack rates among those exposed
  - lower atk rates in workers with filtered air supply
- Disease outside normal geographic area
  - especially in the absence of a competent vector
- Distinctive downwind pattern - plume

BW Attack or Naturally Occurring Disease?

- More than one epidemic occurring simultaneously
- Unusual presentation of a disease
  - respiratory instead of cutaneous
- Dead animals
  - multiple species; reverse spread
- Direct evidence - discovery of a potential delivery device, suspicious activity, munitions

BW Resources

- ✓**Internet:**
  - **www.usamriid.army.mil**
  - **www.nbc-med.org**
- ✓**Toll-free number: 1-888-USA-RIID**
- ✓**MCBC, FCBC Courses (in-house, exportable)**
- ✓**Satellite show 21-23 SEP 99; video -‘98 show**
- ✓**Texts (TMM, “Blue Book,” JAMA, 6 Aug 97)**
- ✓**CD ROM**

Operational Medicine Division
Distance Learning Program

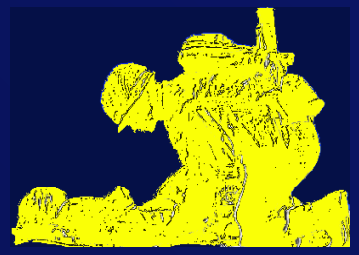
2nd annual "Medical Response to Biological Warfare and Terrorism" broadcast:

- **18,167 participants**
- **$5.50/CME credit hour**

Medical CB Handbooks

Textbook of Military Medicine
Part I
Warfare, Weaponry, and the Casualty

MEDICAL ASPECTS OF CHEMICAL AND BIOLOGICAL WARFARE



MEDICAL MANAGEMENT OF CHEMICAL CASUALTIES

HANDBOOK

MEDICAL MANAGEMENT OF BIOLOGICAL CASUALTIES

MEDICAL MANAGEMENT OF CHEMICAL CASUALTIES

FIELD MANAGEMENT HANDBOOK

Chemical Casualty Care Office
U.S. Army Medical Research Institute of Chemical Defense

Aberdeen Proving Ground
Maryland 21010-5425

July 1996

Third Edition

MEDICAL MANAGEMENT OF BIOLOGICAL CASUALTIES

HANDBOOK

U.S. ARMY MEDICAL RESEARCH
INSTITUTE OF INFECTIOUS DISEASES

FORT DETRICK
FREDERICK, MARYLAND

July 1998

BW Resources

- ✓ **Operational Medicine Division, USAMRIID - (301) 619-4276**

  DSN: 343-4276
- ✓ **USAMRICD - DSN - 584-2230**
- ✓ **Chem/Bio Hotline - 1-800-424-8802**

Summary

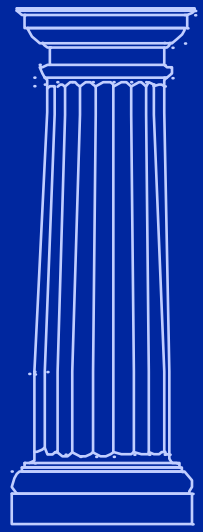
- ✓BW represents potential for terrorist threat against civilian populations
- ✓Massive casualties could be produced
- ✓Agents of most concern: anthrax, smallpox

Federal Response to Bioterrorism

- ✓ **FBI - crisis management (DEST)**
- ✓ **FEMA - consequence management**
- ✓ **PHS Office of Emergency Preparedness (OEP) - civilian medical response**
  - **Metropolitan Medical Response System (MMRS)**
  - **National Medical Response Team (NMRT)**
  - **Disaster Medical Assistance Team (DMAT)**

Domestic Preparedness

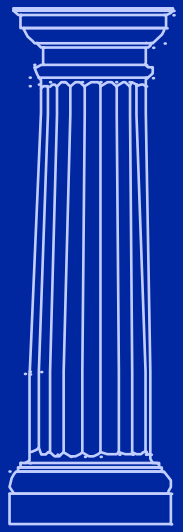
Training



- Fire
- Police
- Medical
- Operators

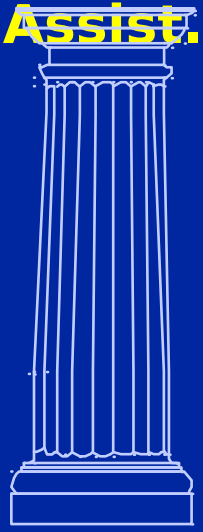
Dispatchers

Exercises



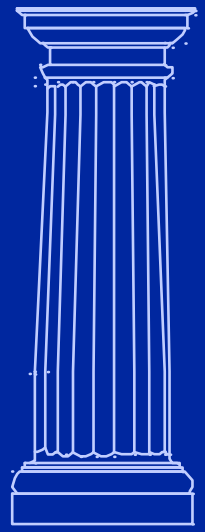
- Table top
- Functional
- Annual
- RIP

Expert Assist.



- Hotline
- Helpline
- Equip Testing
- Web Page

CB Response



- Specialized DOD Assets
  - RTF/CBRRT
  - Equip Sets

Builds Upon Existing OSHA Infrastructure

Domestic Preparedness Program Overview

“Don’t worry! We’re from the military and we are here to help!!”

The Mod Squad

“Hey!! Who’s in charge around here??”

“THE BOSS”
(Incident Commander)

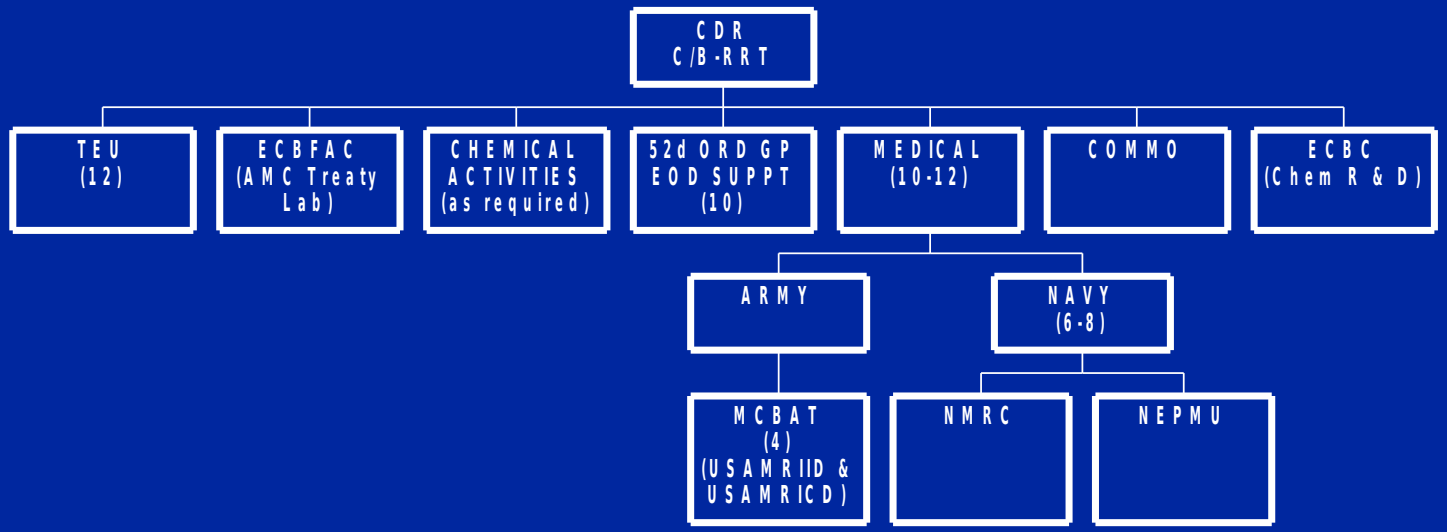
Chem/Bio-Rapid Response Team (C/B-RRT)

TASK ORGANIZED:

- TEU
- ECBC Monitoring Lab
- USAMRICD
- USAMRIID
- 52d Ord (EOD)
- NEPMU
- Chem Activities
- NMRI
- NRL

MISSION - detection, neutralization, containment, dismantlement, and disposal of WMDs containing chem / bio or hazmats, and assist first responders in dealing with their potential consequences.

C/B-RRT Structure



USMC Chemical-Biological Incident Response Force (CBIRF)

- ✓ Approximately 350 person unit located at Camp LaJeune, NC
- ✓ 30+ medical personnel, 2 physicians, 1 PA, 1 nurse
- ✓ Capabilities - casualty recon, decon, early life-saving treatment and stabilization, site security
- ✓ “Turn casualties into patients”
- ✓ Most effective when forward deployed

Army Medical Command Special Medical Augmentation Response Teams (SMART)

- ✓ Four types of teams based out of six Regional Medical Commands (RMC's)
  - **Trauma / Critical Care**
  - **Chem / Bio**
  - **Stress Management**
  - **Medical Command, Control, Commo, Telemedicine**
- ✓ Deploys within 24 hours of notification
- ✓ Mission - provide on-site medical advice, consultation, and limited clinical augmentation

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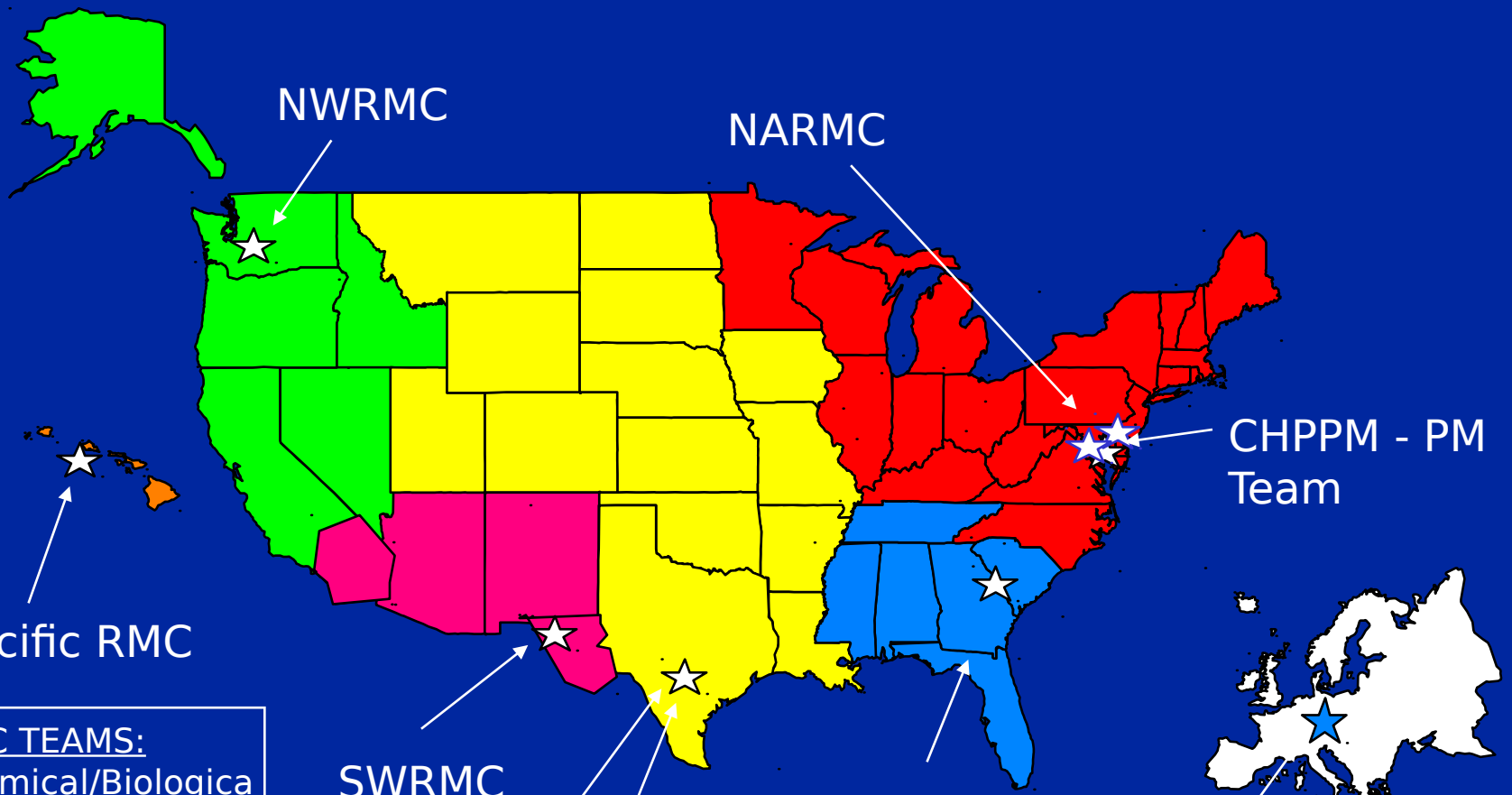
MEDCOM SMART Teams



RMC TEAMS:
- Chemical/Biological
- Trauma/Critical Care
- Stress Management
- C3 Telemedicine

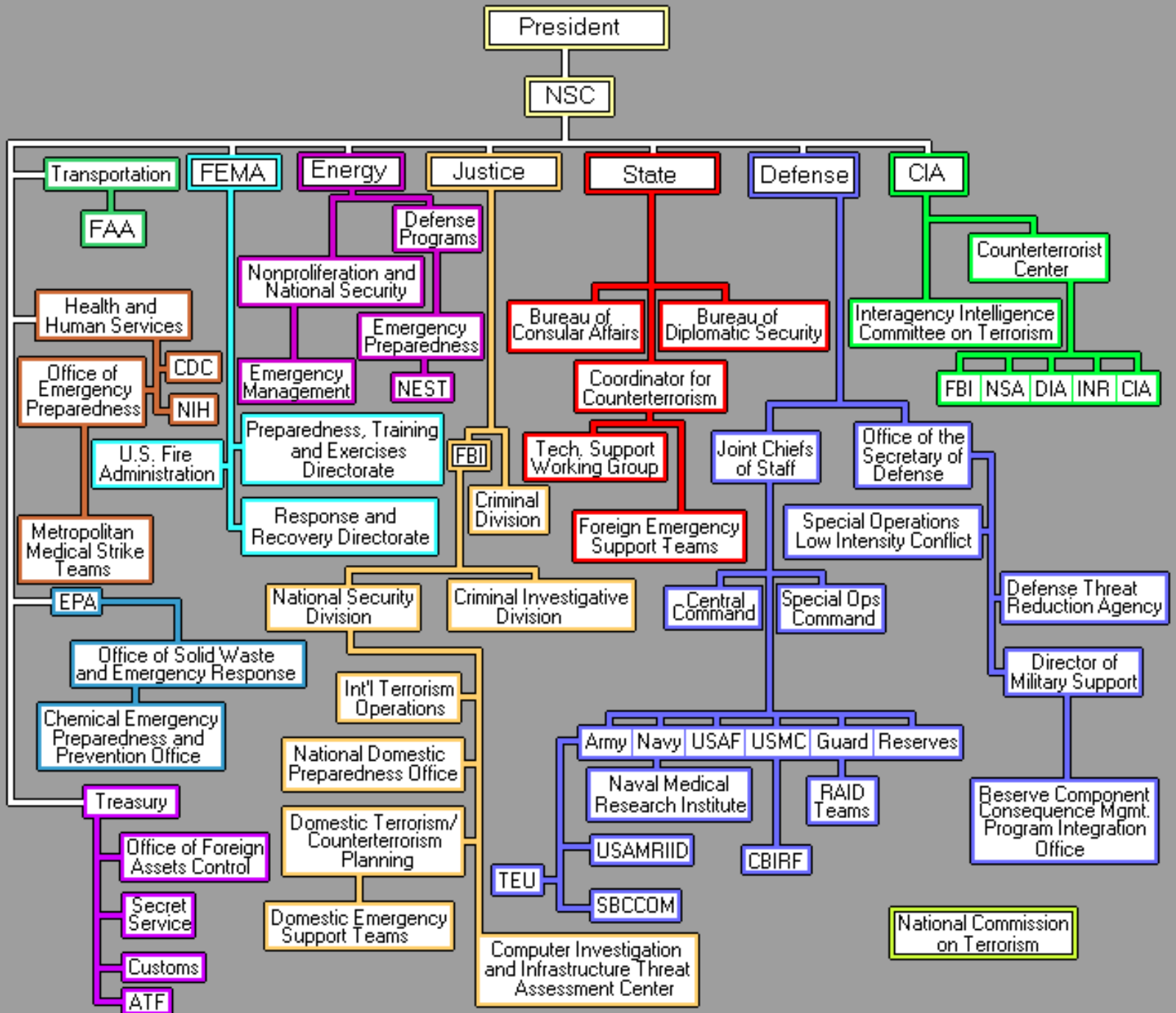
NG Rapid Assessment & Initial Detection (RAID) Teams

- ✓Ten teams
- ✓Composition - 22 full-time personnel
- ✓Mission - assist local authorities with emergency response

Seattle
Spokane
Tacoma
Portland
Minneapolis
St. Paul
Grand Rapids
Madison
Milwaukee
Warren
Detroit
Worchester
Boston
Natick
Providence
Syacuse
Rochester
Springfield
Buffalo
Scotia
Yonkers
New York
Newark
Jersey City
Cleveland
Akron
Philadelphia
Ft. Indiantown Gap
Chicago
Fort Wayne
Toledo
Pittsburgh
Columbus
Baltimore
Freemont
Sacramento
Omaha
Des Moines
Lincoln
Peoria
Dayton
Arlington
Washington, DC
Cincinnati
Oakland
San Francisco
Stockton
San Jose
Modesto
Fresno
Salt Lake City
Denver
Aurora
Colorado Springs
Kansas City
Kansas City
Indianapolis
St. Louis
Louisville
Richmond
Newport News
Norfolk
Virginia Beach
Chesapeake
Los Alamitos
Bakersfield
Las Vegas
Wichita
Ft. Leonard Wood
Lexington-Fayette
Glendale
San Bernadino
Los Angeles
Riverside
Long Beach
Anaheim
Huntington Beach
Santa Ana
San Diego
Phoenix
Glendale
Mesa
Tucson
Albequerque
Amarillo
Tulsa
Oklahoma City
Greensboro
Raleigh
Knoxville
Charlotte
Nashville
Memphis
Chattanooga
Huntsville
Little Rock
Marietta
Atlanta
Birmingham
Montgomery
Columbus
Lubbock
Irving
Garland
Dallas
Fort Worth
Arlington
Jackson
El Paso
Shreveport
Mobile
Jacksonville
Austin
Houston
Baton Rouge
New Orleans
Metairie
San Antonio
Corpus Christi
Orlando
Tampa
St. Petersburg
Ft. Lauderdale
Hialeah
Miami
Honolulu
Anchorage
Key:
Cities designated for Nunn-Lugar-Domenici funding
Cities designated for Rapid Assessment and Initial Detection (RAID) teams
Cities designated for both NLD funds and RAID teams

Metropolitan Medical Strike Teams (MMST)

- ✓ Tailored to each city
  - Enhance existing unique city response system
- ✓ Follow first responder - assist:
  - victim removal
  - first aid
  - decon
- ✓ Provide first-responder training, decon equipment, pharmaceuticals, enhance emergency transportation, ER capabilities


President
NSC
Transportation
FAA
FEMA
Energy
Justice
State
Defense
CIA
Defense Programs
Nonproliferation and National Security
Emergency Preparedness
Emergency Management
NEST
Health and Human Services
CDC
NIH
Office of Emergency Preparedness
U.S. Fire Administration
Preparedness, Training and Exercises Directorate
Response and Recovery Directorate
Metropolitan Medical Strike Teams
EPA
Office of Solid Waste and Emergency Response
Chemical Emergency Preparedness and Prevention Office
Treasury
Office of Foreign Assets Control
Secret Service
Customs
ATF
FBI
Criminal Division
National Security Division
Criminal Investigative Division
Int'l Terrorism Operations
National Domestic Preparedness Office
Domestic Terrorism/ Counterterrorism Planning
Domestic Emergency Support Teams
Computer Investigation and Infrastructure Threat Assessment Center
Bureau of Consular Affairs
Bureau of Diplomatic Security
Coordinator for Counterterrorism
Tech. Support Working Group
Foreign Emergency Support Teams
Counterterrorist Center
Interagency Intelligence Committee on Terrorism
FBI NSA DIA INR CIA
Joint Chiefs of Staff
Office of the Secretary of Defense
Special Operations Low Intensity Conflict
Central Command
Special Ops Command
Defense Threat Reduction Agency
Director of Military Support
Army Navy USAF USMC Guard Reserves
Naval Medical Research Institute
RAID Teams
Beserve Component Consequence Mgmt. Program Integration Office
TEU
USAMRIID
SBCCOM
CBIRF
National Commission on Terrorism